



Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Adams et al	§
		§ Art Unit: 3653
Serial No:	10/057,755	§
		§ Examiner: Joerger, Kaitlin S
Filed:	01/23/022	§
		§ Atty Docket No: SC 040
For:	Screen Assemblies For	§
	Shale Shakers	§ Conf. No. 9532

**SUPPLEMENTAL
RESPONSE TO OFFICE ACTION MAILED 12/02/03**

Mail Stop Non Fee Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Dear Sir:

This is a Supplemental Response to the Office Action mailed 12/02/2003.
Please enter the amendments that follow.

Listing of Claims

- 1. - 50. (cancelled)
- 51. (new) A screen assembly for releasable mounting ...
- 52. - 54. (new) The screen assembly of claim 51 wherein ...
- 55. (new) A screen assembly for releasable mounting ...
- 56. - 57. (new) The screen assembly of claim 55 wherein ...
- 58. (new) A shale shaker system for separating components ...
- 59. - 60. (new) The shale shaker of Claim 58 wherein ...
- 61. (new) A shale shaker system for separating components ...
- 62. - 63. (new) The screen assembly of claim 61 wherein ...
- 64. (new) A screen assembly for releasable mounting ...
- 65. (new) A shale shaker ...

Pending Claims

1 51. (new) A screen assembly for releasable mounting to a mounting structure
2 of a shale shaker, the mounting structure comprising a body over which a screen
3 assembly is positionable, part of fluid to be treated by the shale shaker flowable
4 through the body, at least one upwardly projecting member projecting upwardly from
5 the body member, said at least one upwardly projecting member sized and configured
6 so it is receivable in a corresponding hole in the screen assembly, said at least one
7 projecting member having a projecting member cross-sectional area, the screen
8 assembly comprising

9 a support,

10 screening material on the support,

11 the support comprising a frame with two spaced-apart ends, the
12 two spaced-apart ends spaced-apart by two spaced-apart sides, each of the
13 two spaced-apart sides connected to each of the two spaced-apart ends, the
14 frame having a plurality of spaced-apart crossmembers extending between the
15 two spaced-apart sides from one side to the other side, at least one of the
16 plurality of spaced-apart crossmembers comprising a tubular member with a top
17 and a bottom, a portion of the screening material on top of the tubular member,
18 at least one hole in the bottom of the tubular member, said at least
19 one hole sized, configured, and located for receiving said at least one upwardly
20 projecting member of the body of the mounting structure, said at least one hole
21 having a hole area, said hole cross-sectional area greater than said projecting
22 member cross-sectional area.

1 52. (new) The screen assembly of claim 51 wherein the at least one upwardly
2 projecting member of the body of the mounting structure is a plurality of spaced-apart
3 upwardly projecting members and wherein the at least one hole is a plurality of
4 spaced-apart holes, each for receiving an upwardly projecting member of the body of
5 the mounting structure.

1 53. (new) The screen assembly of claim 51 wherein the at least one upwardly
2 projecting member is a plurality of upwardly projecting members and wherein the at
3 least one of the plurality of spaced-apart crossmembers is a plurality of tubular spaced-
4 apart cross members, each with at least one hole in a bottom thereof for receiving one
5 of the plurality of upwardly projecting members.

1 54. (new) The screen assembly of claim 51 further comprising
2 at least one downwardly projecting member projecting downwardly
3 from the tubular member, said at least one downwardly projecting member
4 sized, configured, and located for receipt within a corresponding hole of said
5 mounting structure.

1 55. (new) A screen assembly for releasable mounting to a mounting structure
2 of a shale shaker, the mounting structure comprising a body over which a screen
3 assembly is positionable, part of fluid to be treated by the shale shaker flowable
4 through the body, at least one hole in the body, said at least hole sized and configured
5 for receipt therein of a corresponding downwardly projecting member of the screen
6 assembly, said at least one projecting member having a projecting member cross-
7 sectional area, the screen assembly comprising

8 a support,

9 screening material on the support,

10 the support comprising a frame with two spaced-apart ends, the
11 two spaced-apart ends spaced-apart by two spaced-apart sides, each of the
12 two spaced-apart sides connected to each of the two spaced-apart ends, the
13 frame having a plurality of spaced-apart crossmembers extending between the
14 two spaced-apart sides from one side to the other side, at least one of the
15 plurality of spaced-apart crossmembers comprising a tubular member with a top
16 and a bottom, a portion of the screening material on top of the tubular member,
17 at least one downwardly projecting member projecting downwardly
18 from the bottom of the tubular member, said at least one downwardly
19 projecting member sized, configured, and located for receipt within a
20 corresponding hole of said mounting structure, said at least one hole having a

21 hole area, said hole cross-sectional area greater than said projecting member
22 cross-sectional area.

1 56. (new) The screen assembly of claim 55 wherein the at least one
2 downwardly projecting member is a plurality of spaced-apart downwardly projecting
3 members and wherein the at least one hole in the body of the mounting structure is
4 a plurality of spaced-apart holes, each for receiving a downwardly projecting member.

1 57. (new) The screen assembly of claim 55 wherein the at least one
2 downwardly projecting member is a plurality of downwardly projecting members and
3 wherein the at least one of the plurality of spaced-apart crossmembers is a plurality
4 of tubular spaced-apart cross members, each of said tubular spaced-apart cross
5 members with at least one hole in a bottom thereof for receiving one of the plurality
6 of downwardly projecting members.

1 58. (new) A shale shaker system for separating components of drilling fluid
2 with solids entrained therein, the shale shaker system comprising

3 a base,

4 a screen mounting basket on the base,

5 vibrating apparatus connected to the screen mounting basket for
6 vibrating the screen mounting basket,

7 the screen mounting basket comprising mounting structure for at
8 least one screen assembly mounted on the mounting structure, the mounting
9 structure comprising a body over which the at least one screen assembly is
10 positionable, part of the drilling fluid to be treated by the shale shaker flowable
11 through the at least one screen assembly and through the body,

12 at least one screen assembly mounted on the mounting structure,

13 the at least one screen assembly comprising a screen assembly
14 for releasable mounting to the mounting structure of a shale shaker,

15 the mounting structure having at least one upwardly projecting
16 member projecting upwardly from the body member, said at least one upwardly
17 projecting member sized and configured so it is receivable in a corresponding
18 hole in the screen assembly, said at least one projecting member having a

19 projecting member cross-sectional area,
20 the screen assembly including
21 a support,
22 screening material on the support,
23 the support comprising a frame with two spaced-apart ends,
24 the two spaced-apart ends spaced-apart by two spaced-apart sides, each
25 of the two spaced-apart sides connected to each of the two spaced-apart
26 ends, the frame having a plurality of spaced-apart crossmembers
27 extending between the two spaced-apart sides from one side to the other
28 side, at least one of the plurality of spaced-apart crossmembers
29 comprising a tubular member with a top and a bottom, a portion of the
30 screening material on top of the tubular member, and
31 at least one hole in the bottom of the tubular member, said
32 at least one hole sized, configured, and located for receiving said at least
33 one upwardly projecting member of the body of the mounting structure,
34 said at least one hole having a hole cross-sectional area, said hole cross-
35 sectional area greater than said projecting member cross-sectional area.

1 59. (new) The shale shaker of Claim 58 wherein the at least one upwardly
2 projecting member is a plurality of upwardly projecting members and wherein the at
3 least one of the plurality of spaced-apart crossmembers is a plurality of tubular spaced-
4 apart cross members, each of said tubular spaced-apart cross members with at least
5 one hole in a bottom thereof for receiving one of the plurality of upwardly projecting
6 members.

1 60. (new) The screen assembly of claim 58 wherein the at least one upwardly
2 projecting member is a plurality of upwardly projecting members and wherein the at
3 least one of the plurality of spaced-apart crossmembers is a plurality of tubular spaced-
4 apart cross members, each with at least one hole in a bottom thereof for receiving one
5 of the plurality of upwardly projecting members.

1 61. (new) A shale shaker system for separating components of drilling fluid
2 with solids entrained therein, the shale shaker system comprising

3 a base,
4 a screen mounting basket on the base,
5 vibrating apparatus connected to the screen mounting basket for
6 vibrating the screen mounting basket,
7 the screen mounting basket comprising mounting structure for at
8 least one screen assembly mounted on the mounting structure, the mounting
9 structure comprising a body over which the at least one screen assembly is
10 positionable, part of the drilling fluid to be treated by the shale shaker flowable
11 through the at least one screen assembly and through the body,
12 at least one screen assembly mounted on the mounting structure,
13 the at least one screen assembly comprising a screen assembly for
14 releasable mounting to a mounting structure of a shale shaker,
15 the mounting structure having at least one hole in the body, said
16 at least hole sized and configured for receipt therein of a corresponding
17 downwardly projecting member of the screen assembly,
18 the screen assembly including
19 a support,
20 screening material on the support,
21 the support comprising a frame with two spaced-apart ends,
22 the two spaced-apart ends spaced-apart by two spaced-apart sides, each
23 of the two spaced-apart sides connected to each of the two spaced-apart
24 ends, the frame having a plurality of spaced-apart crossmembers
25 extending between the two spaced-apart sides from one side to the other
26 side, at least one of the plurality of spaced-apart crossmembers
27 comprising a tubular member with a top and a bottom, a portion of the
28 screening material on top of the tubular member, and
29 at least one downwardly projecting member projecting
30 downwardly from the bottom of the tubular member, said at least one
31 projecting member having a projecting member cross-sectional area, said
32 at least one downwardly projecting member sized, configured, and

33 located for receipt within a corresponding hole of said mounting
34 structure, said at least one hole having a hole area, said hole cross-
35 sectional area greater than said projecting member cross-sectional area.

1 62. (new) The screen assembly of claim 61 wherein the at least one
2 downwardly projecting member is a plurality of spaced-apart downwardly projecting
3 members and wherein the at least one hole in the body of the mounting structure is
4 a plurality of spaced-apart holes, each for receiving a downwardly projecting member.

1 63. (new) The screen assembly of claim 61 wherein the at least one
2 downwardly projecting member is a plurality of downwardly projecting members and
3 wherein the at least one of the plurality of spaced-apart crossmembers is a plurality
4 of tubular spaced-apart cross members, each of said tubular spaced-apart cross
5 members with at least one hole in a bottom thereof for receiving one of the plurality
6 of upwardly projecting members.

1 64. (new) A screen assembly for releasable mounting to a mounting structure
2 of a shale shaker, the mounting structure comprising a body over which a screen
3 assembly is positionable, part of fluid to be treated by the shale shaker flowable
4 through the body, at least one upwardly projecting member projecting upwardly from
5 the body member, said at least one upwardly projecting member sized and configured
6 so it is receivable in a corresponding hole in the screen assembly, said at least one
7 projecting member having a projecting member cross-sectional area, the screen
8 assembly comprising

9 a support,

10 screening material on the support,

11 the support comprising a frame with two spaced-apart ends, the
12 two spaced-apart ends spaced-apart by two spaced-apart sides, each of the
13 two spaced-apart sides connected to each of the two spaced-apart ends, the
14 frame having a plurality of spaced-apart crossmembers extending between the
15 two spaced-apart sides from one side to the other side, at least part of the
16 frame comprising a tubular member with a top and a bottom, a portion of the
17 screening material on top of the tubular member,

18 at least one hole in the bottom of the tubular member, said at least
19 one hole sized, configured, and located for receiving said at least one upwardly
20 projecting member of the body of the mounting structure, said at least one hole
21 having a hole area, said hole cross-sectional area greater than said projecting
22 member cross-sectional area.

1 65. (new) A shale shaker system for separating components of drilling fluid
2 with solids entrained therein, the shale shaker system comprising

3 a base,

4 a screen mounting basket on the base,

5 vibrating apparatus connected to the screen mounting basket for
6 vibrating the screen mounting basket,

7 the screen mounting basket comprising mounting structure for at
8 least one screen assembly mounted on the mounting structure, the mounting
9 structure comprising a body over which the at least one screen assembly is
10 positionable, part of the drilling fluid to be treated by the shale shaker flowable
11 through the at least one screen assembly and through the body,

12 at least one screen assembly mounted on the mounting structure,

13 the at least one screen assembly comprising a screen assembly
14 for releasable mounting to the mounting structure of a shale shaker,

15 the mounting structure having at least one upwardly projecting
16 member projecting upwardly from the body member, said at least one upwardly
17 projecting member sized and configured so it is receivable in a corresponding
18 hole in the screen assembly, said at least one projecting member having a
19 projecting member cross-sectional area,

20 the screen assembly including

21 a support,

22 screening material on the support,

23 the support comprising a frame with two spaced-apart ends,
24 the two spaced-apart ends spaced-apart by two spaced-apart sides, each
25 of the two spaced-apart sides connected to each of the two spaced-apart

26 ends, the frame having a plurality of spaced-apart crossmembers
27 extending between the two spaced-apart sides from one side to the other
28 side, at least part of the frame comprising a tubular member with a top
29 and a bottom, a portion of the screening material on top of the tubular
30 member, and

31 at least one hole in the bottom of the tubular member, said
32 at least one hole sized, configured, and located for receiving said at least
33 one upwardly projecting member of the body of the mounting structure,
34 said at least one hole having a hole cross-sectional area, said hole cross-
35 sectional area greater than said projecting member cross-sectional area.

REMARKS

The pending claims — claims 27 - 45 and 49 — have been rejected for various reasons under §§ 102, 103 and 112. All of these claims have been cancelled. No new claims are presented here corresponding to now-cancelled claims 27 - 38. Each new independent claim 51 and 55 is directed to a screen assembly and each new independent claim 58 and 61 is directed to a shale shaker with a screen assembly as in new claim 51 (claim 58) or new claim 55 (claim 61). Thus this Response will address on the merits only the rejections of claim 39 - 45 (under § 102) and claim 49 (under § 103).

Claims 39 - 45 § 102 Rejection

Claims 39 - 45 have been rejected under § 102 based on Boccabella et al (U.S. 5,816,413; "Boccabella"). These claims have been cancelled. New independent claim 51 recites these limitations:

- the support for the screening material is a frame
- the frame has a crossmember that is a tubular member
- the tubular member has the hole that receives a member projecting upwardly from the screen mounting structure
- the hole receives the entire cross-section of the upwardly projecting member
- a portion of the screening material is on top of the tubular member(s)

Applicants respectfully submit that Boccabella does not teach or suggest the structure now claimed in new claim 51. Boccabella's wire screen modules 57 are mounted above support plates 63 that support electromagnets 61. The support plates 63 are not "crossmembers" as crossmember is now defined in new claim 51. The locator pins 91 connected to the electromagnets 61 do not project into frame crossmembers, but into the support plates 63 which are in the corners of the frame 68.

Boccabella's beams 53 and 55 do not have any members that project upwardly

into crossmembers of a frame 68 because the frames 68 do not have crossmembers as now defined in new claim 51.

Boccabella's frames 68 do not have holes as defined in new claim 51 (holes that can receive an entire cross-section of an upwardly projecting member; rather Boccabella's cut-outs 93 are only semi-circles — and they must be for Boccabella to achieve his purpose of having two adjacent aligned cut-outs for encompassing the lock down pins 114 and so the pins will hold two adjacent frames.

Boccabella's polyurethane modular screen panels 59 have cross-rib portions 100, but there is no teaching or suggestion to have a hole in these cross-ribs to receive a member projecting upwardly from the beams 53, 55.

As claimed in new claim 51, screening material is on top of the tubular member which has a hole in its bottom for receiving an upwardly projecting members. No screening material is over any of Boccabella's cut-outs 93 (of the wire screen modules 57) or the cut-outs 103 (of the polyurethane screen panels 59). If such screening material as claimed in new claim 51 was on top of the entire surface of Boccabella's screen panels, the pins 114 could not be inserted into the cut-outs.

Boccabella's pins 114 and sleeves 108 are not initially on the beams 53, 55 presenting something projecting upward that has to be accommodated by a screen assembly placed above them; i.e., Boccabella does not recognize or address the problems dealt with by the present invention (e.g. see the Specification, Page 22, last paragraph).

Applicants respectfully submit that new claims 51 - 53 are not anticipated by Boccabella.

Claim 43 has been rejected under § 102 based on Boccabella. This claim has been cancelled. New independent claim 55 recites the limitations that a downwardly projecting member projects down from a tubular member crossmember. Applicants repeat here the remarks above regarding Boccabella's failure to teach or suggest the crossmember(s) as now claimed herein and the remarks above regarding the disposition of screening material above the tubular member crossmember. Boccabella has no teaching or suggestion of the tubular member crossmember with a downwardly

projecting member as now claimed in new claim 55; and Applicants respectfully submit that new claims 55 - 57 are not anticipated by Boccabella.

Claim 49 — § 103 Rejection

Claim 49 has been rejected under § 103 based on Boccabella in view of Galton et al (U.S. 5,372,261; "Galton"). Claim 49 has been cancelled. New independent claims 58 and 61 correspond roughly to now cancelled claim 49. New independent claim 58 incorporates the screen assembly as claimed in new claim 51 and new independent claim 61 incorporates the screen assembly as claimed in new independent claim 55. Applicants repeat here the discussion regarding new claims 51 and 55 and the discussion of the Boccabella reference.

The Galton reference does not remedy the deficiencies of the Boccabella reference with respect to the subject matter of new claims 58 - 63. No crossmember in Galton has a downwardly projecting member in a crossmember as now claimed, as in new claim 61, and no hole in a crossmember as now claimed in new claim 58. No screening material in Galton is above a tubular member crossmember as now claimed in new claims 58 and 61.

New Claims 64, 65

New claim 64 is similar to new claim 51, but recites that the at least one hole is in part of the frame. New claim 65 is like new claim 58, but recites that the at least one hole is in part of the frame.

Excess Claim Fee

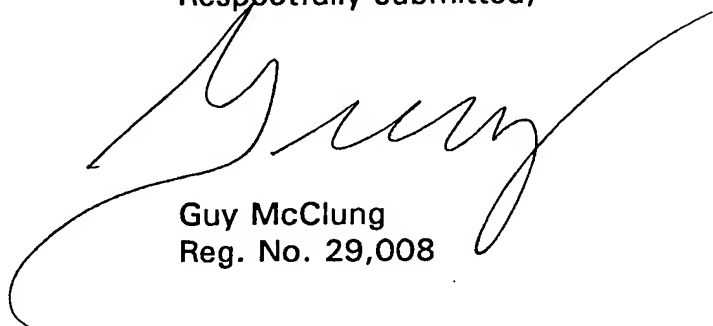
Although it appears sufficient excess claim fees have already been paid, if any excess claim fee is required, please charge it to Deposit Account 13-0195.



Conclusion

Applicants appreciate the careful and detailed Office Action. Applicants note that the drawings have been accepted. This is intended to be a complete Response to the Office Action. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,



Guy McClung
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Date: 30 Jan 04

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Guy McClung, Reg. No. 29,008

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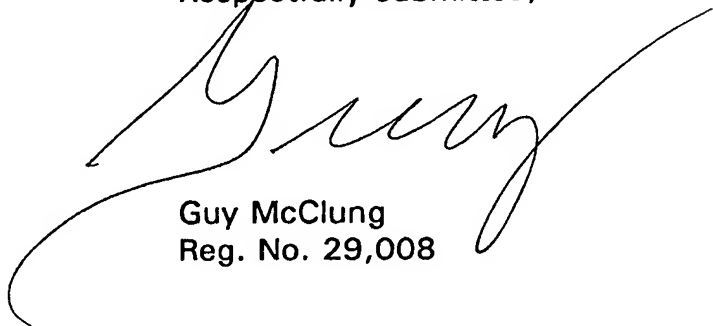

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Conclusion

Applicants appreciate the careful and detailed Office Action. Applicants note that the drawings have been accepted. This is intended to be a complete Response to the Office Action. Early and favorable reconsideration is respectfully requested.

Respectfully submitted,



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